

Local food products in health care facilities: Elderly sensory acceptance of a local food menu

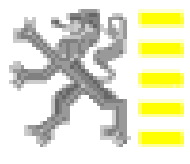
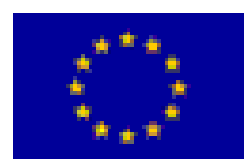
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Objectives

Tradition and familiarity to meals, often found in local food products, increase elderly sensory acceptance of meals. Yet, these local food products are not often served in health care facilities.

AIM

- ✓ Introduce local products on the menu of health care facilities
- ✓ Enhance cooperation between health care facilities and local producers
- ✓ Increase elderly sensory acceptance of meals
- ✓ Increase taste experiences among elderly

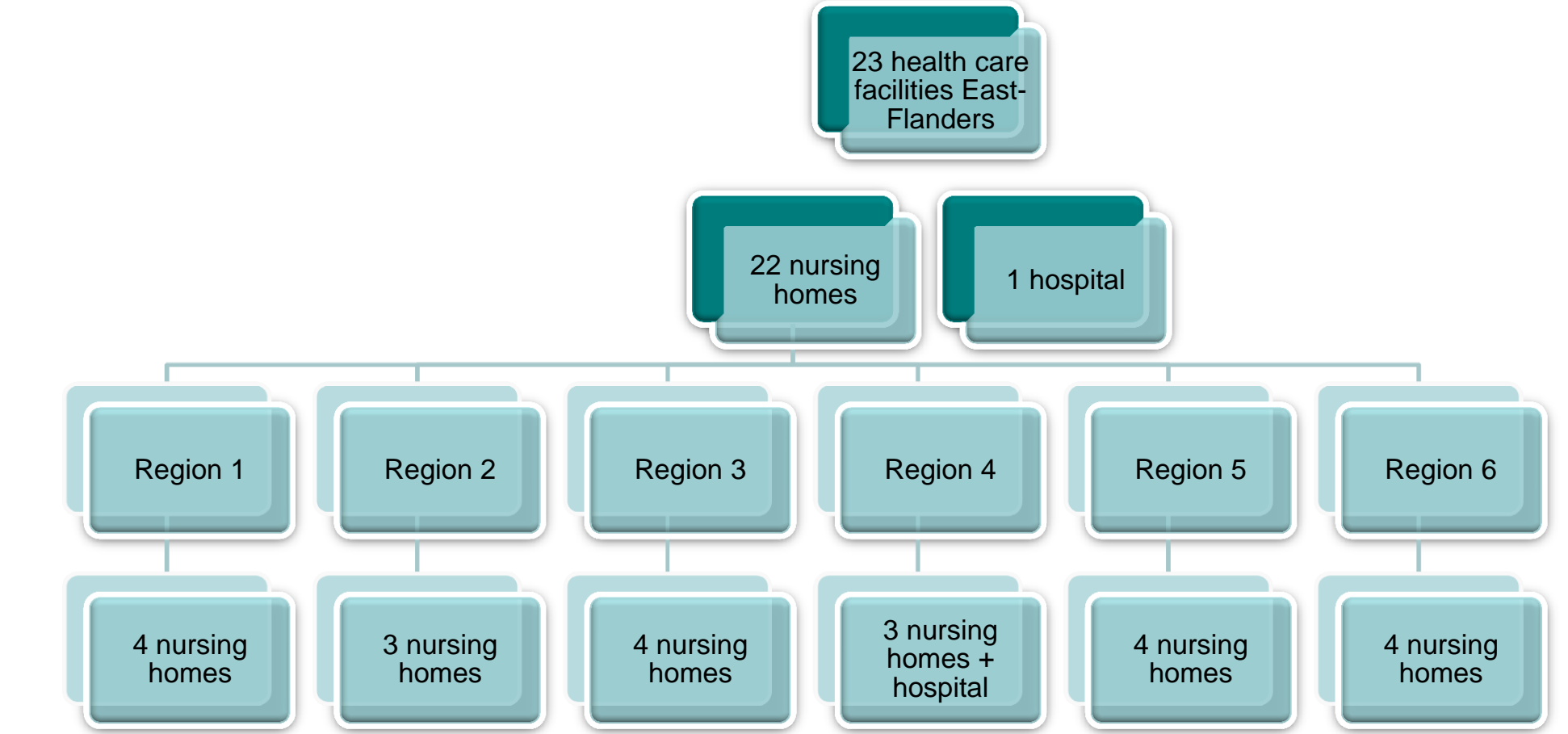
Materials & methods

PRODUCTS:

Menu with local food products from East-Flanders (Belgium) developed during 2 workshops:

- Theoretical workshop
- Practical workshop

Menu was tested in 23 health care facilities in East-Flanders.



CONSUMER TEST

- Sensory evaluation
 - Overall liking of each dish
 - Overall acceptance of the menu
 - Comparative liking with regularly served food in health care facility
- Malnutrition
 - Council for Nutritional Appetite Questionnaire (CNAQ)
- Socio-demographics
 - Gender
 - Age
 - Need of care: KATZ-score or DOS-score

NUTRITIONAL AND PRICE EVALUATION

- Nutritional evaluation
 - Kcal compared to daily requirement of 75+
- Price evaluation
 - Price compared to food cost

WORKSHOP “TASTE EXPERIENCE”

- Facts about local products – Quiz
- Tasting of local products

RESPONDENTS

- 336 respondents (84.25 years)
 - 254 ♀ (85 ± 7,0 years)
 - 82 ♂ (82,5 ± 8,5 years)
- 46.3% of total respondents have a risk of malnutrition

Wilson, M.-M. G., Thomas, D. R., Rubenstein, L. Z., Chibnall, J. T., Anderson, S., Baxi, A., Morley, J. E. (2005). Appetite assessment: simple appetite questionnaire predicts weight loss in community-dwelling adults and nursing home residents. *The American journal of clinical nutrition*, 82(5), 1074-1081.

Results

MENU WORKSHOP

- Theoretical workshop
 - Variety
 - Kitchen facilities
 - Taste
 - Food cost
- Practical workshop
 - Recipe, ingredients, suppliers local products, price

CONSUMER TEST

Sensory evaluation

REGION 1 (60 ♂ 46 ♀ 14 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	41.7	39.0	45.0	35.0
Like	43.3	40.7	43.3	51.7
Like somewhat	3.3	3.4	6.7	6.7
Neither like nor dislike	3.3	11.9	3.3	3.3
Dislike somewhat	3.3	3.4	1.7	3.3
Dislike	5.0	1.7	0.0	0.0
Dislike very much	0.0	0.0	0.0	0.0

REGION 3 (65 ♂ 46 ♀ 19 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	34.4	26.7	34.9	23.8
Like	42.2	59.4	54.0	58.7
Like somewhat	6.3	3.1	7.9	9.5
Neither like nor dislike	9.4	3.1	1.6	4.8
Dislike somewhat	3.1	1.6	1.6	3.2
Dislike	3.1	3.1	0.0	0.0
Dislike very much	1.6	0.0	0.0	0.0

REGION 5 (51 ♂ 41 ♀ 10 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	47.1	23.5	23.5	23.5
Like	39.2	45.1	51.0	45.1
Like somewhat	3.9	11.8	9.8	11.8
Neither like nor dislike	5.9	17.7	15.7	13.7
Dislike somewhat	0.0	2.0	0.0	5.9
Dislike	3.9	0.0	0.0	0.0
Dislike very much	0.0	0.0	0.0	0.0

REGION 2 (53 ♂ 40 ♀ 13 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	44.0	42.3	52.0	43.1
Like	42.0	36.5	34.0	37.3
Like somewhat	10.0	9.6	8.0	7.8
Neither like nor dislike	2.0	7.7	4.0	7.8
Dislike somewhat	0.0	0.0	0.0	2.0
Dislike	2.0	0.0	2.0	2.0
Dislike very much	0.0	3.9	0.0	0.0

REGION 4 (56 ♂ 42 ♀ 14 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	44.4	30.9	26.0	29.6
Like	42.6	56.4	56.0	51.9
Like somewhat	9.3	7.3	6.0	11.1
Neither like nor dislike	1.9	5.5	8.0	7.4
Dislike somewhat	1.9	0.0	0.0	0.0
Dislike	0.0	0.0	4.0	0.0
Dislike very much	0.0	0.0	0.0	0.0

REGION 6 (54 ♂ 42 ♀ 12 ♂)				
Liking (%)	Soup	Main dish	Dessert	Overall liking
Like very much	48.2	42.3	24.0	33.3
Like	40.6	51.9	50.0	59.2
Like somewhat	5.6	1.9	4.0	1.9
Neither like nor dislike	5.6	3.9	18.0	3.7
Dislike somewhat	0	0	0	1.9
Dislike	0	0	4.0	0
Dislike very much	0	0	0	0

High acceptance of local food menu

- ➔ Positive evaluation of each dish
- ➔ Positive evaluation of total menu
- ➔ No significant difference between regions or KATZ-score



Malnutrition

		High risk	Low risk
Region	Region 1	40.0%	60.0%
	Region 2	62.5%	37.5%
	Region 3	56.9%	43.1%
	Region 4	60.0%	40.0%
	Region 5	50.8%	49.2%
	Region 6	56.9%	43.1%
Need of care	DOS	50.0%	50.0%
	Category O	57.9%	42.1%
	Category A	58.9%	41.1%
	Category B	47.4%	52.6%
	Category C	42.1%	57.9%
	Category Cd	61.3%	38.7%
	Categorie D	80.0%	20.0%

NUTRITIONAL AND PRICE EVALUATION

	Menu	Comparison daily requirement (♂ ₇₅₊ = 2000 kcal, ♀ ₇₅₊ = 1850 kcal)	
		♂	♀
Mean kcal	1391	-609	-459
Mean kcal per region			
Region 1	1186	-814	-664
Region 2	2522	522	672
Region 3	1884	-116	34
Region 4	924	-1076	-926
Region 5	1136	-864	-714
Region 6	1541	-459	-309

Nutritional value

- High variation in amount of kcal between region due to:
 - Portion size
 - Ingredients (fat and sugar)

Risk of malnutrition

- ± 50% ♂
- 68.4% ♀
- 48.6% ♀

Low risk group has a more critical opinion about food

➔ Local food products = increase sensory acceptance and emotional involvement

➔ INDIRECT EFFECT

	Menu	Food cost	
		Lunch	Day
Mean food cost	4.02 (85%)	2.17	4.77
Mean food cost per region			
Region 1	3.56 (99%)	1.80	5.07
Region 2	7.28 (237%)	2.16	4.78
Region 3	3.94 (41%)	2.80	5.56
Region 4	3.53 (121%)	1.60	4.15
Region 5	4.81 (160%)	1.85	3.90
Region 6	3.42 (44%)	2.39	5.50

Price evaluation

- 85% higher than mean food cost
- ➔ Big threshold to implement local food products in health care facilities

Conclusions

This study introduced local food products on menu's of health care facilities. The menu was evaluated by 336 respondents (84,25 years).

Sensory evaluation

- ✓ High acceptance of the local food menu

Malnutrition

- ✓ High risk of malnutrition
- ✓ Possible implications:
 - ✓ Introduction of nutritional balanced and tasty snack for elderly
 - ✓ Introduction of local food products
 - ✓ Enhancing knowledge about changing nutritional requirements with increasing age

Nutritional and price evaluation

- ✓ High variation in nutritional value
- ✓ Higher price, but no higher effort
- ✓ Price is one of the biggest thresholds to implement local food products